



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

**MEMORANDUM**

Date: November 22, 2019

Subject: Efficacy Review for Jaguar  
EPA Reg. No. 5813-REU  
DP Barcode: 454829  
E-Submission: 39613

From: Nicole Karikari  
Efficacy Evaluation Team  
Product Science Branch  
Antimicrobials Division (7510P)

Thru: Thao Pham, Acting Team Leader  
Product Science Branch  
Antimicrobials Division (7510P)  
Date Signed: 12/4/19

To: Demson Fuller, Team 32 / Wanda Henson  
Regulatory Management Branch I  
Antimicrobials Division (7510P)

Applicant: The Clorox Company  
c/o PS&RC  
P.O. Box 493  
Pleasanton, CA 94566-0803

*Nicole Karikari*

*Thao Pham*

**Formulation from the Label:**

<u>Active Ingredient(s)</u>	<u>% by wt.</u>
Sodium hypochlorite.....	3.65%
<u>Other Ingredients</u> .....	96.35%
Total .....	100.00%

**I BACKGROUND**

**Product Description (as packaged, as applied):** Liquid concentrate

**Submission type:** New product registration

**Currently registered efficacy claim(s):** N/A

**Requested action(s):** Review cited data supporting a new end use product registration as a food contact sanitizer, non-food contact sanitizer, and disinfectant product for hard, non-porous surfaces.

**Documents considered in this review:**

- Cover Letter dated 5/24/19
- Confidential Statement of Formula (Form 8570-4)
  - Basic Formulation dated 5/24/19
  - Alternate Formulation (A01) dated 5/24/19
- Data Matrix (Form 8570-35) Agency and Public copies dated 5/24/19
- Product Label dated 5/24/19
- Terms of Registration Letter dated 5/24/19
- Three Submitted Efficacy Studies:
  - MRID 50839903 dated 5/22/19
  - MRID 50839904 dated 4/4/12
  - MRID 50839905 dated 4/29/13
- Fifty-three cited (EPA Reg. No. 5813-100) Efficacy Studies:
  - MRID 48017509 dated 1/28/19
  - MRID 48017513 dated 2/23/10
  - MRID 48017514 dated 2/23/10
  - MRID 48017518 dated 2/23/10
  - MRID 48017522 dated 1/25/10
  - MRID 48017523 dated 1/13/10
  - MRID 48017524 dated 12/18/09
  - MRID 48295506 dated 11/3/10
  - MRID 48295507 dated 10/28/10
  - MRID 48484818 dated 7/1/10
  - MRID 48484822 dated 5/27/10
  - MRID 48484829 dated 6/9/10
  - MRID 48484830 dated 5/28/10
  - MRID 48484831 dated 5/28/10
  - MRID 48484832 dated 6/29/10
  - MRID 48484835 dated 1/11/11
  - MRID 48484836 dated 5/13/10
  - MRID 48484837 dated 4/16/10
  - MRID 48484838 dated 3/19/10
  - MRID 48484845 dated 4/18/11
  - MRID 49076701 dated 1/23/13
  - MRID 49602206 dated 3/19/15
  - MRID 49602211 dated 3/27/15
  - MRID 49602212 dated 2/12/15
  - MRID 49602218 dated 3/26/15
  - MRID 49602219 dated 4/3/15
  - MRID 49602220 dated 4/3/15
  - MRID 49602222 dated 3/25/15
  - MRID 49642002 dated 6/23/15

- MRID 49642003 dated 6/10/15
- MRID 49642004 dated 6/23/15
- MRID 49642005 dated 6/4/15
- MRID 49642007 dated 6/17/15
- MRID 49642009 dated 3/18/15
- MRID 49642010 dated 6/23/15
- MRID 49913506 dated 5/3/16
- MRID 49913507 dated 2/4/16
- MRID 49913525 dated 4/4/16
- MRID 49968101 dated 5/3/16
- MRID 49968102 dated 6/14/16
- MRID 49968104 dated 5/4/16
- MRID 49968105 dated 5/13/16
- MRID 49968106 dated 5/2/16
- MRID 49968107 dated 5/2/16
- MRID 49968109 dated 6/30/16
- MRID 49968110 dated 3/10/16
- MRID 49968112 dated 3/7/16
- MRID 49968113 dated 5/18/16
- MRID 49968115 dated 7/13/16
- MRID 49968117 dated 3/2/16
- MRID 49968118 dated 6/7/16
- MRID 49968119 dated 6/30/16
- MRID 50289305 dated 6/26/16

## II PROPOSED DIRECTIONS FOR USE

### “Household Disinfection Use Directions:

[Preclean to remove visible soils.] Use 1 cup -and/or- 240 mL of this product in -or- per one -or- 1 gal[lon] of water. Pre-wash surface [or item], then apply bleach [disinfecting] solution. Let stand for 5 min[utes]. Rinse [thoroughly] and air dry. ***Must add the following if Canine parvovirus -and/or- Feline parvovirus on label*** To disinfect Canine parvovirus and Feline parvovirus let stand for 10 min[utes]. ***Must add the following if Aspergillus brasiliensis -and/or- Candida albicans -and/or- Trichophyton interdigitale on label*** To disinfect fungi, use 1 cup -and/or- 240 mL of this product in -or- per 1/2 gal[lon] of water.

**To Disinfect Floors, Walls And Showers:** For hard, nonporous surfaces such as vinyl or ceramic tile, pre-clean surfaces to remove visibly soiled surfaces. Wet surfaces thoroughly with sponge or mop using a bleach solution containing 1 cup -and/or- 240 mL bleach per gal[lon] of water. Allow solution to remain on the surface for 5 min[utes]. Rinse[, let dry]. ***Must add the following if Canine parvovirus -and/or- Feline parvovirus on label*** To disinfect Canine parvovirus and Feline parvovirus let stand for 10 min[utes]. ***Must add the following if Aspergillus brasiliensis -and/or- Candida albicans -and/or- Trichophyton interdigitale on label***

To disinfect fungi, use 1 cup -and/or- 240 mL of this product in -or- per 1/2 gal[lon] of water.

**To Disinfect Toilets:** Flush toilet. Pour 1 cup -and/or- 240 mL [of] bleach -or- this product into bowl. Thoroughly brush bowl, making sure to get under the rim and let stand for 5 min[utes] and flush again.

**To Disinfect Work Surfaces:** (not utensils): After each use, scrub thoroughly with hot suds; rinse with clear, cold water. Then prepare a disinfecting solution of 1 cup -and/or- 240 mL this product to each gal[lon] of water. Apply with sponge this solution for 5 min[utes]. Rinse with potable water. Air dry. **Must add the following if Canine parvovirus -and/or- Feline parvovirus on label** To disinfect Canine parvovirus and Feline parvovirus let stand for 10 min[utes]. **Must add the following if Aspergillus brasiliensis -and/or- Candida albicans -and/or- Trichophyton interdigitale on label** To disinfect fungi, use 1 cup -and/or- 240 mL of this product in -or- per 1/2 gal[lon] of water.

**To Disinfect Hard, Nonporous Floors:** (plastic or ceramic tile): Mix 1 cup -and/or- 240 mL this product per gal[lon] of water. Mop or scrub. (Do not use on cork or linoleum.) Let stand 5 min[utes]. Rinse. **Must add the following if Canine parvovirus -and/or- Feline parvovirus on label** To disinfect Canine parvovirus and Feline parvovirus let stand for 10 min[utes]. **Must add the following if Aspergillus brasiliensis -and/or- Candida albicans -and/or- Trichophyton interdigitale on label** To disinfect fungi, use 1 cup -and/or- 240 mL of this product in -or- per 1/2 gal[lon] of water.

### **Household Sanitization Use Directions:**

**To Sanitize Food Contact Work Surfaces:** After each use, scrub thoroughly with hot suds; rinse with clear, cold water. Then prepare a sanitizing solution of 2 Tablespoons -or- Tbsp of this product to each gal[lon] of water. Apply with sponge this solution for 2 min[utes]. Air dry.

**To Sanitize Refrigerators:** First wash inside surfaces. Then wipe with solution of 2 Tablespoons -or- Tbsp this product to each gal[lon] of warm water. Let stand for [at least] 2 min[ute]. Air dry. (Do not use on steel, aluminum, silver, or chipped enamel.)

**To Sanitize Brushes<sup>▫</sup>, Mops<sup>▫</sup> & Brooms<sup>▫</sup>:** After using brushes, mops and brooms, wash thoroughly; then soak for 5 min[utes] in solution of 1 cup -and/or- 240 mL this product to 1 gal[lon] of warm water. Rinse with clear water; dry. (Not recommended for cellulose sponge mops.)

**To Sanitize Pails and Dustpans:** Remove visible dirt prior to cleaning. Wash with solution prepared by thoroughly mixing 1 cup -and/or- 240 mL this product with 3/4 gal[lon] water. Soak pails and dustpans; let stand 2 min[utes]. Rinse with clear, cold water. Air dry.

**To [Deodorize and] Sanitize Garbage Cans/Diaper Pails:** Preclean garbage can -and/or- diaper pail with a cleaning product prior to sanitization. Rinse with water and drain. Pour in 1 cup -and/or- 240 mL this product to 3/4 gal[lon] of water. Mix. Let stand [at least] 2 min[utes]. Rinse and air dry.

**Laundry [Stain Removal] Use:** Sort laundry by color. Add 1 cup -and/or- 240 mL of this product and detergent to wash water, or 1 1/2 cups -and/or- 360 mL of this product for extra large washer -or- heavily soiled loads. [For H[igh] E[fficiency] [Machines], add to max[imum] line -or- level [in dispenser].] Add laundry.

**To Deodorize Drain Pipes:** Flush with very hot water followed by 1 cup -and/or- 240 mL of this product. Wait 5 min[utes]; flush out with clear water.”

### **III STUDY SUMMARIES**

Refer to reviews under primary applications (EPA Reg No. 5813-100 and 5813-114) for cited study summaries. MRIDs 50839903, 50839904, and 50839905 provide an efficacy discussion and chemical characterization in support of data citation.

#### IV STUDY RESULTS

Refer to reviews under primary applications (EPA Reg No. 5813-100 and 5813-114) for study results.

#### V STUDY CONCLUSIONS

MRID	Claim	Surface Type	Application Method(s) and Dilution	Contact Time	Soil load	Diluent	Organism	Data support tested conditions?
48017509, 48484836, 48484837, 48484838, 49913507, 49968101, 49968102, 49968104, 49968105, 49968106, 49968107	Disinfectant, bactericidal	Hard, non- porous surfaces	Wet surfaces thoroughly; ½ cup/ 1 gallon (1:32 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA) (ATCC 33592)</li> <li>• <i>Streptococcus pyogenes</i> (ATCC 19615)</li> <li>• <i>Legionella pneumophila</i> (ATCC 33153)</li> <li>• <i>Escherichia coli</i> O157:H7 (ATCC 35150)</li> <li>• <i>Bordetella pertussis</i> (ATCC 12743)</li> <li>• Community Associated Methicillin Resistant <i>Staphylococcus aureus</i> - CA-MRSA Genotype USA 400 (NARSA NRS 123)</li> <li>• Extended-Spectrum beta-lactamase (ESBL) producing</li> </ul>	Yes

							<i>Escherichia coli</i> (ATCC BAA-196) • Multi-drug Resistant (MDR) <i>Acinetobacter baumannii</i> (ATCC 19606) • <i>Shigella dysenteriae</i> (ATCC 11835) • <i>Streptococcus pneumoniae</i> (ATCC 6305) • Vancomycin Resistant <i>Enterococcus faecalis</i> - VRE (ATCC 51575)	
48017513, 48017514, 48484822, 48484830, 48484831, 48484832, 48484835, 48484845, 49913525, 49968109, 49968110, 49968112, 49968113, 49968115, 49968117, 49968118, 49968119	Disinfectant, virucidal	Hard, non- porous surfaces	Wet surfaces thoroughly; ½ cup/ 1 gallon (1:32 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	• Rotavirus, Strain WA • Feline Calicivirus (ATCC VR-782) (surrogate for Norovirus) • Human Immunodeficiency Virus Type 1, Strain HTLV-III <sub>B</sub> • 2009-H1N1 Influenza A virus (Novel H1N1) Strain A/Mexico/4108/2009 (CDC 2009712192) • Influenza B virus, Strain B/Hong Kong/5/72 (ATCC VR-823) • Human Coronavirus, Strain 229E (ATCC VR-740)	<b>Yes</b>

							<ul style="list-style-type: none"> <li>• Rubella Virus, Strain M-33 (ATCC VR-315); Varicella-Zoster Virus (ATCC VR-1367)</li> <li>• Parainfluenza virus Type 3, Strain C243, (ATCC VR-93)</li> <li>• Herpes simplex virus type 1, Strain F(1) (ATCC VR-733)</li> <li>• Adenovirus Type 2, Strain Adenoid 6 (ATCC VR-846)</li> <li>• Avian Influenza A (H5N1) virus, Strain VNH5N1-PR8/CDC-RG (CDC# 2006719965)</li> <li>• Coxsackievirus Type B3, Strain Nancy (ATCC VR-30)</li> <li>• Enterovirus EV-D68 (ATCC VR-561)</li> <li>• Hepatitis A virus, Strain HM-175</li> <li>• Mumps Virus, Strain Jones (ATCC VR-1438)</li> <li>• Murine Norovirus, Strain MNV-1.CW1</li> <li>• Poliovirus type 1, Strain Chat (ATCC VR-1562)</li> </ul>	
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48017518	Disinfectant, fungicidal	Hard, non-porous surfaces	Wet surfaces thoroughly; ¾ cup/ 1 gallon dilution	5 minutes	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Aspergillus brasiliensis</i> (ATCC 16404) (tested as <i>Aspergillus niger</i>)</li> </ul>	<b>Yes</b>
48017522	Food Contact Sanitizing Rinse	Hard, non-porous surfaces	Wet surfaces thoroughly; 50 ppm, 100 ppm, and 200 ppm dilutions	1 minute	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Salmonella enterica</i> (ATCC 6539) (tested as <i>Salmonella typhi</i>)</li> </ul>	<b>Yes</b> , established equivalency to 50, 100, and 200 ppm available chlorine
48017523, 48017524	Non-Food Contact Sanitizer	Hard, non-porous surfaces	Wet surfaces thoroughly; ½ cup/ 1 gallon (1:32 dilution)	30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Staphylococcus aureus</i> (ATCC 6538)</li> <li>• <i>Klebsiella pneumoniae</i> (ATCC 4352)</li> </ul>	<b>Yes</b>
48295506, 48295507, 49602212	Non-Food Contact Sanitizer	Hard, non-porous surfaces	Wet surfaces thoroughly; ½ cup/ 1 gallon (1:32 dilution)	20 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Staphylococcus aureus</i> (ATCC 6538)</li> <li>• <i>Klebsiella pneumoniae</i> (ATCC 4352)</li> </ul>	<b>Yes</b>
48484818, 48484829	Disinfectant, virucidal	Hard, non-porous surfaces	Wet surfaces thoroughly; ½ cup/ 1 gallon (1:32 dilution)	9 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• Feline Panleukopenia Virus, Strain Philips-Roxane (ATCC VR-648)</li> <li>• Canine Parvovirus, Strain Cornell (ATCC VR-2017)</li> </ul>	<b>Yes</b>
49076701	Disinfectant, tuberculocidal	Hard, non-porous surfaces	Wet surfaces thoroughly; 1:10 dilution	9 minutes 45 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Mycobacterium bovis</i> - BCG</li> </ul>	<b>Yes</b>
49602206	Disinfectant, tuberculocidal	Hard, non-	Wet surfaces thoroughly; 1:22 dilution	9 minutes	5% Fetal Bovine Serum	100 ppm AOAC	<ul style="list-style-type: none"> <li>• <i>Mycobacterium bovis</i> - BCG</li> </ul>	<b>Yes</b>



		porous surfaces				Synthetic Hard Water		
49602211	Non-Food Contact Sanitizer	Hard, non-porous surfaces	Wet surfaces thoroughly; ½ cup/ 1 gallon (1:32 dilution)	2 minutes	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Staphylococcus aureus</i> (ATCC 6538)</li> </ul>	<b>Yes</b>
49602218, 49602219	Disinfectant, bactericidal	Hard, non-porous surfaces	Wet surfaces thoroughly; 2.67 oz/ 1 gallon (1:49 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Staphylococcus aureus</i> (ATCC 6538)</li> <li>• <i>Salmonella enterica</i> (ATCC 10708)</li> </ul>	<b>Yes</b>
49602220	Disinfectant, fungicidal	Hard, non-porous surfaces	Wet surfaces thoroughly; 2.67 oz/ 1 gallon (1:49 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Trichophyton interdigitale</i> (ATCC 9533) (Tested as <i>Trichophyton mentagrophytes</i>)</li> </ul>	<b>Yes</b>
49602222	Disinfectant, virucidal	Hard, non-porous surfaces	Wet surfaces thoroughly; 2.67 oz/ 1 gallon (1:49 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• Rhinovirus Type 37, Strain 151-1 (ATCC VR-1147)</li> </ul>	<b>Yes</b>
49642002, 49642003, 49642004, 49642010	Disinfectant, bactericidal	Hard, non-porous surfaces	Wet surfaces thoroughly; ¼ cup/ ¾ gallon (1:42.7 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Staphylococcus aureus</i> (ATCC 6538)</li> <li>• <i>Salmonella enterica</i> (ATCC 10708)</li> <li>• <i>Pseudomonas aeruginosa</i> (ATCC 15442)</li> </ul>	<b>Yes</b>
49642005	Disinfectant, fungicidal	Hard, non-porous surfaces	Wet surfaces thoroughly; ¼ cup/ ¾ gallon (1:42.7 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Trichophyton interdigitale</i> (ATCC 9533) (Tested as <i>Trichophyton mentagrophytes</i>)</li> </ul>	<b>Yes</b>

49642007, 49642009	Disinfectant, virucidal	Hard, non- porous surfaces	Wet surfaces thoroughly; ¼ cup/ ¾ gallon (1:42.7 dilution)	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• Influenza A Virus, Type A2, Strain Hong Kong (Flu Virus) (ATCC VR-544)</li> <li>• Measles Virus (ATCC VR-24)</li> </ul>	<b>Yes</b>
49913506	Disinfectant, bactericidal	Hard, non- porous surfaces	Wet surfaces thoroughly; 1:381 dilution	4 minutes 30 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• <i>Yersinia enterocolitica</i> (ATCC 23715)</li> </ul>	<b>Yes</b>
50289305	Disinfectant, virucidal	Hard, non- porous surfaces	Wet surfaces thoroughly; 1:33 dilution	4 minutes 31 seconds	5% Fetal Bovine Serum	100 ppm AOAC Synthetic Hard Water	<ul style="list-style-type: none"> <li>• Ebola virus, Strain Zaire-Kikwit (AIMS #22955)</li> </ul>	<b>Yes</b>

## VI LABEL COMMENTS

**Label Date/Identification Number:** May 24, 2019

1. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with bactericidal activity against the following organisms on hard, non-porous surfaces when diluted to 1 cup/ 1 gallon (1:16 dilution) for at least 5 minutes contact time in the presence of 5% organic soil:
  - *Staphylococcus aureus* (ATCC 6538)
  - *Salmonella enterica* (ATCC 10708)
  - *Pseudomonas aeruginosa* (ATCC 15442)
  - Methicillin Resistant *Staphylococcus aureus* (MRSA) (ATCC 33592)
  - *Streptococcus pyogenes* (ATCC 19615)
  - *Legionella pneumophila* (ATCC 33153)
  - *Escherichia coli* O157:H7 (ATCC 35150)
  - *Bordetella pertussis* (ATCC 12743)
  - Community Associated Methicillin Resistant *Staphylococcus aureus* - CA-MRSA Genotype USA 400 (NARSA NRS 123)
  - Extended-Spectrum beta-lactamase (ESBL) producing *Escherichia coli* (ATCC BAA-196)
  - Multi-drug Resistant (MDR) *Acinetobacter baumannii* (ATCC 19606)
  - *Shigella dysenteriae* (ATCC 11835)
  - *Streptococcus pneumoniae* (ATCC 6305)
  - Vancomycin Resistant *Enterococcus faecalis* - VRE (ATCC 51575)

These claims are **acceptable** as they are supported by the cited data.

2. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with tuberculocidal activity against the following organism on hard, non-porous surfaces when diluted to a 1:4 dilution for at least 10 minutes contact time in the presence of 5% organic soil:
  - *Mycobacterium bovis* - BCG

This claim is **acceptable** as it is supported by the cited data.

3. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with fungicidal activity against the following organism on hard, non-porous surfaces when diluted to 1 cup/ ½ gallon (1:8 dilution) for at least 5 minutes contact time in the presence of 5% organic soil:
  - *Aspergillus brasiliensis* (ATCC 16404) (tested as *Aspergillus niger*)
  - *Trichophyton interdigitale* (ATCC 9533) (Tested as *Trichophyton mentagrophytes*)

This claim is **acceptable** as it is supported by the cited data.

4. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with fungicidal activity against the following organism on hard, non-porous surfaces when diluted to 1 cup/ ½ gallon (1:8 dilution) for at least 5 minutes contact time in the presence of 5% organic soil:

- *Candida albicans* (ATCC 10231)

This claim is **not acceptable** as it is not supported by the cited data. Remove all references to this organism from the label.

5. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with virucidal activity against the following on hard, non-porous surfaces when diluted to 1 cup/ 1 gallon (1:16 dilution) for at least 5 minutes contact time in the presence of 5% organic soil:

- Rotavirus, Strain WA
- Feline Calicivirus (ATCC VR-782) (surrogate for Norovirus)
- Human Immunodeficiency Virus Type 1, Strain HTLV-III<sub>B</sub>
- 2009-H1N1 Influenza A virus (Novel H1N1) Strain A/Mexico/4108/2009 (CDC 2009712192)
- Influenza B virus, Strain B/Hong Kong/5/72 (ATCC VR-823)
- Human Coronavirus, Strain 229E (ATCC VR-740)
- Rubella Virus, Strain M-33 (ATCC VR-315); Varicella-Zoster Virus (ATCC VR-1367)
- Parainfluenza virus Type 3, Strain C243, (ATCC VR-93)
- Adenovirus Type 2, Strain Adenoid 6 (ATCC VR-846)
- Coxsackievirus Type B3, Strain Nancy (ATCC VR-30)
- Enterovirus EV-D68 (ATCC VR-561)
- Hepatitis A virus, Strain HM-175
- Mumps Virus, Strain Jones (ATCC VR-1438)
- Murine Norovirus, Strain MNV-1.CW1
- Poliovirus Type 1, Strain Chat (ATCC VR-1562)
- Rhinovirus Type 37, Strain 151-1 (ATCC VR-1147)
- Influenza A Virus, Type A2, Strain
- Hong Kong (Flu Virus) (ATCC VR-544)
- Measles Virus (ATCC VR-24)
- Ebola virus, Strain Zaire-Kikwit (AIMS #22955)

These claims are **acceptable** as they are supported by the cited data.

6. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with virucidal activity against the following on hard, non-porous surfaces when diluted to 1 cup/ 1 gallon (1:16 dilution) for at least 5 minutes contact time in the presence of 5% organic soil:

- Herpes Simplex Virus type 2, Strain G (ATCC VR-734)

This claim is **not acceptable** as it is not supported by the cited data. Organism may be revised to Herpes simplex virus type 1, Strain F(1) (ATCC VR-733), as supported by the cited data.

7. The proposed label claims regarding the use of the product, Jaguar, as a disinfectant with virucidal activity against the following on hard, non-porous surfaces when diluted to 1 cup/ 1 gallon (1:16 dilution) for at least 10 minutes contact time in the presence of 5% organic soil:
- Feline Panleukopenia Virus, Strain Philips-Roxane (ATCC VR-648)
  - Canine Parvovirus, Strain Cornell (ATCC VR-2017)

These claims are **acceptable** as they are supported by the cited data.

8. The proposed label claims efficacy regarding the use of the product, Jaguar, as a food contact sanitizer equivalent to 100 ppm available chlorine against the following organism on precleaned hard, non-porous surfaces when diluted to 2 tbsp /1 gallon for at least 2 minutes contact time in the presence of 5% organic soil:
- *Salmonella enterica* (ATCC 6539) (tested as *Salmonella typhi*)

This claim is **partially acceptable** as it is supported by the cited data. However, the contact time should be revised to 1 minute for a food contact sanitizing rinse claim, and it's recommended that the label dilution on pages 4 and 10 be revised to the 200-ppm dilution (4 tsp / gallon), specifying equivalency to 200 ppm available chlorine.

9. The proposed label claims regarding the use of the product, Jaguar, as a food contact sanitizer with bactericidal activity against the following organism on hard, non-porous surfaces when diluted to 2 tbsp / gallon for at least 2 minutes contact time in the presence of 5% organic soil:
- *Yersinia enterocolitica* (ATCC 23715)

This claim is **not acceptable** as it is not supported by the cited data. Claim should be revised to a disinfectant claim for at least 4 minutes and 30 seconds, as supported by data.

10. The proposed label claims regarding the use of the product, Jaguar, as a non-food contact sanitizer against the following organisms on hard, non-porous surfaces when diluted to 1 cup/  $\frac{3}{4}$  gallon (1:12 dilution) for at least 2 minutes contact time in the presence of 5% organic soil:
- *Staphylococcus aureus* (ATCC 6538)
  - *Klebsiella pneumoniae* (ATCC 4352)

These claims are **acceptable** as they are supported by the cited data.

11. The proposed label claims that the product, Jaguar, qualifies for the following emerging viral pathogens claims as described in the letter from the applicant to the EPA dated May 24, 2019:

<i>For an emerging viral pathogen that is a/an...</i>	<i>...follow the directions for use for the following organisms on the label:</i>
Enveloped virus	<ul style="list-style-type: none"> <li>• Adenovirus Type 8 (ATCC VR-1368)</li> <li>• Canine Parvovirus (ATCC VR-2017)</li> <li>• Enterovirus EV-D68 (ATCC VR-561)</li> <li>• Feline Calicivirus (ATCC VR-782) (as surrogate for Norovirus Virus)</li> <li>• Feline Parvovirus (ATCC VR-648)</li> <li>• Rotavirus, Strain WA</li> <li>• Rhinovirus Type 37 (ATCC VR-1147)</li> <li>• Murine Norovirus Strain MNV-1.CW1) (as surrogate for Norovirus Virus)</li> </ul>
Large, non-enveloped virus	<ul style="list-style-type: none"> <li>• Canine Parvovirus (ATCC VR-2017)</li> <li>• Enterovirus EV-D68 (ATCC VR-561)</li> <li>• Feline Calicivirus (ATCC VR-782) (as surrogate for Norovirus Virus)</li> <li>• Feline Parvovirus (AYCC VR-648)</li> </ul>
Small, non-enveloped virus	<ul style="list-style-type: none"> <li>• Rhinovirus Type 37 (ATCC VR-1147)</li> <li>• Murine Norovirus Strain MNV-1.CW1) (as surrogate for Norovirus Virus)</li> </ul>

These claims are **acceptable** as they are supported by the cited data.

12. Make the following changes to the proposed label:
- On page 4, remove “ceramic tile” or revise to “glazed ceramic tile”.
  - On page 5 of the label,
    - Under “disinfecting and cleaning mold and mildew” revise claim from “simply wipe down” to “Thoroughly wet”.
    - Under “disinfecting baby furniture and toys”, remove “quickly”. Contact time for this claim does not qualify for “quick” or “fast”.
  - On page 5 and throughout the label, remove claims regarding and associate with “Keep[ing] Wading Pools Sanitary”. Data were not submitted to substantiate these claims.
  - On pages 6 through 7, remove “Disinfection of Drinking Water (Potable)” claims as data were not submitted to substantiate these claims.
  - On pages 9 through 10, remove the brackets from “Strain” identifiers, as bacteria and viruses should be accompanied with strain identifiers.
  - On page 9, revise “Herpes Simplex Virus Type 2, Strain G (ATCC VR-740)” to “Herpes simplex virus Type 1, Strain F(1) (ATCC VR-733)”.
  - On page 10, remove and revise “ATCC VR-899” and “Strain -11” and data was not submitted for this Rotavirus strain.
  - On page 11:
    - Remove “3-in-1” as this claim is misleading. Product does not disinfect (hard surfaces) and whiten (laundry) in one-step.

- ii. Remove the brackets from “[Pet].”
- iii. Remove “kennels” and “litter” or revise to “pet kennels” and “cat litter boxes” as these claims are limited to use sites and surfaces listed on the label.
- iv. Remove or revise “Eliminate[ing][s]” and similar claims by qualifying these claims with the relevant percent organism/virus percent or log reduction.
- v. Remove “Attack[ing][s]” as this claim implies enhanced efficacy activity and is misleading.
- vi. Remove “Disinfect potable water in emergency situations” and similar claims as data were not submitted to substantiate these claims.
- vii. Qualify and reference the organism list for “broad spectrum of microorganisms” as organism claims are limited to organisms listed on the label.
- i. On page 12, remove brackets from strain identifiers and revise virus list to include ATCC identifiers.
- j. On page 13:
  - i. Remove or revise “2 in 1 solution” to “2 in 1 cleaning solution for hard nonporous surfaces and laundry
  - ii. Remove “All-in-one” claim as this is too broad.
- k. On page 14:
  - i. Remove or revise “Appliance [exteriors]” as this claim is too vague.
  - ii. Remove the brackets from “[Bath]”, “[Behind -and/or- under]”, “[Cat]”, “[exteriors]”, “[Shower]”, and “[Pet].”

Note to PM: On page 13, review “Septic tank operation is not affected by regular home and farm use of this product.” Please verify as appropriate.